



University of Hawaii at Manoa

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June 17, 1986
RP: 0059

Mr. Leslie S. Matsubara, Director
Environmental Protection and Health Services
Department of Health
P.O. Box 3378
Honolulu, Hawaii 96801

Dear Mr. Matsubara:

Notice of Proposed Modification
NPDES Permit HI 0021059
Marine Culture Enterprises
Kahuku, Oahu

This letter adds, to the comments on this matter that we sent you on May 28, 1986, further comments resulting from our review of the additional information supplied in the May 1986 "Special Draft—Annual Report on Environmental Monitoring Activities" by AECOS. Keith Chave and Stephen V. Smith, Oceanography, have contributed to these further comments.

The information available suggests that there has been little environmental change within the ZOM established for the MCE discharge—only a benthic algae bloom at the outfall and its effect on the fish population. However, we are concerned that the available information may not include all that would be necessary to detect significant changes in the ZOM; that cumulative effects would become readily apparent even if the continuation of the MCE discharge rate were not increased; and that such effects may be serious if the discharge rate is increased.

There is one clue in the available information which could be turned into an estimate of biological impact. All of the ammonia being discharged is disappearing, apparently by degassing plus uptake (p. 47 of AECOS report). At the pH range in question, degassing can be largely dismissed. The ammonia, if not "lost" to dilution, is apparently entering biomass. Some, undoubtedly, is removed from the area as plankton plus other forms of detritus. Some may be converted to DON and exported. However, much of it is probably accumulating somewhere (plant biomass, animal biomass, sediment organic carbon). The monitoring program now required is apparently inadequate to detect an accumulation of organic nitrogen, and we suggest that MCE and its consultants attempt an inventory to determine just what does happen biochemically to the effluent.

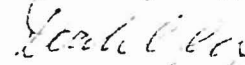
Mr. Leslie Matsubara

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We remain unconvinced that the requested relaxation of the NPDES effluent limitations should be permitted for an "interim" period as long as 1½ years. We suggest that the relaxation be limited to a period of 6 months, after which the NPDES effluent limitations, and the continuation and area of the ZOM, should be reexamined as proposed in our letter of May 28.

Yours very truly,



Doak C. Cox
for Jacquelin Miller
Acting Associate Director

cc: Patrick Takahashi
Steve Chang
Stephen Smith
Keith Chave
Martha Diaz